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Soldiers

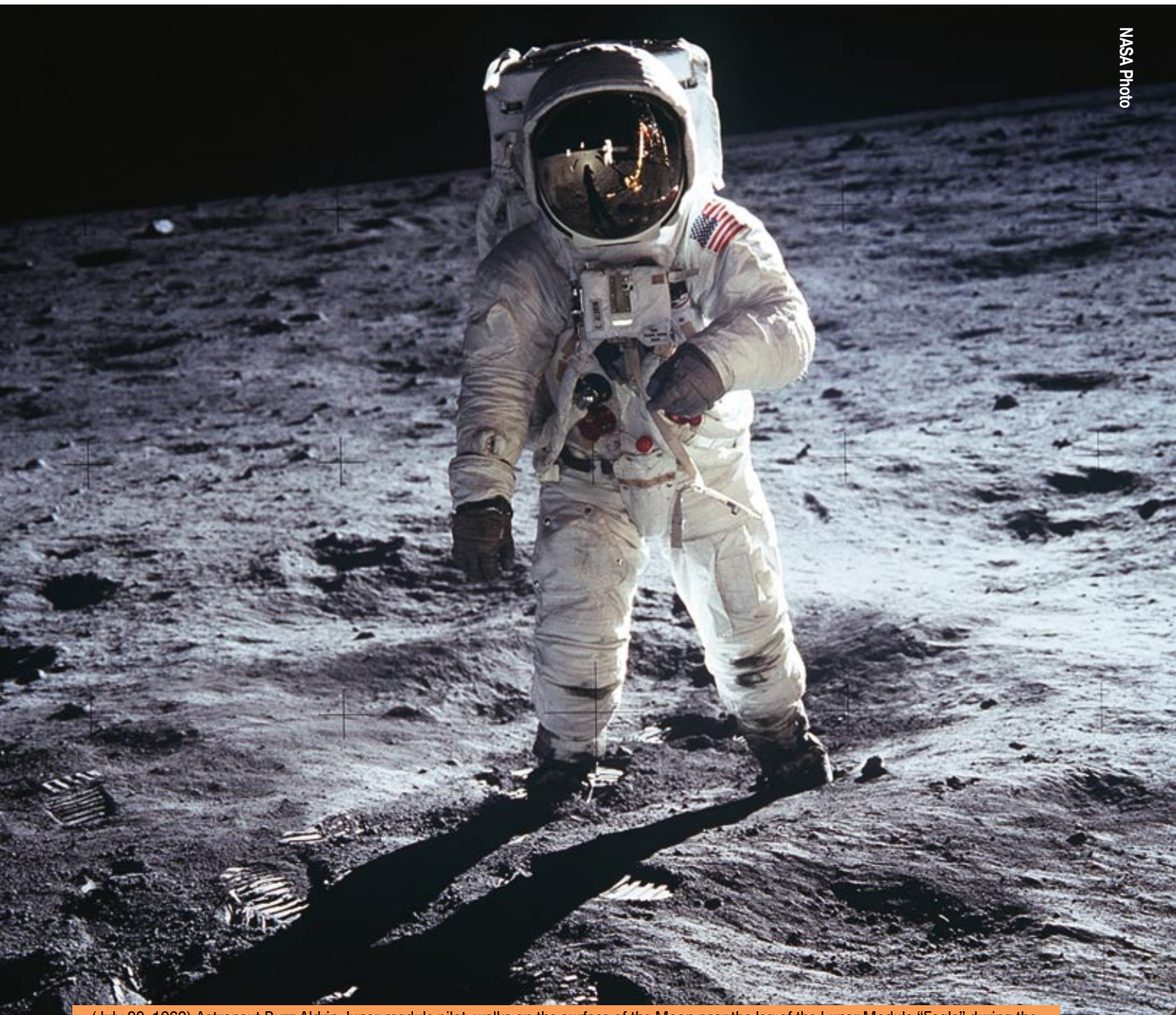
The Official U.S. Army Magazine

Space Soldiers ...
Serving on the final frontier



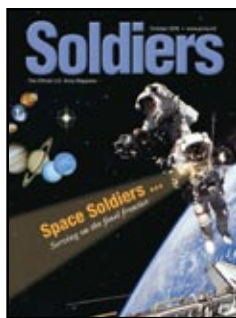
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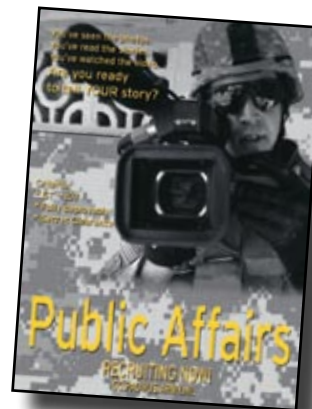


NASA Photo

(July 20, 1969) Astronaut Buzz Aldrin, lunar module pilot, walks on the surface of the Moon near the leg of the Lunar Module "Eagle" during the Apollo 11 extravehicular activity. Astronaut Neil A. Armstrong, commander, took this photograph with a 70mm lunar surface camera.



Cover Image
Design by Peggy Frierson
using NASA images



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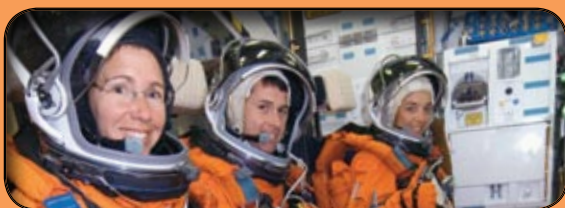
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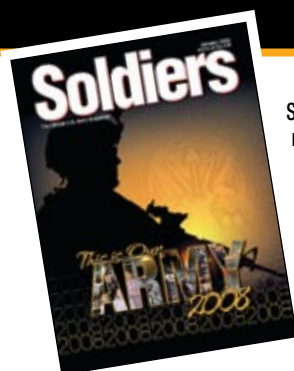
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Rocket Pioneers

Story by Heike Hasenauer
Photos courtesy of NASA Marshall Space Flight Center

ROCKET Pioneers Wernher von Braun, Bernhard Tessmann and Karl Heimburg built early U.S. military rockets at Redstone Arsenal in Huntsville, Ala., home of the U.S. Army Aviation and Missile Command and the U.S. Army Space and Missile Defense Command in April 1950.

Their stories, first reported in Soldiers magazine in 1989, recap the beginning of the U.S. Army's rocket program, born of war and today preventing war, and they trace one man's

dream of space exploration from World War II Germany to America's continuing space program.

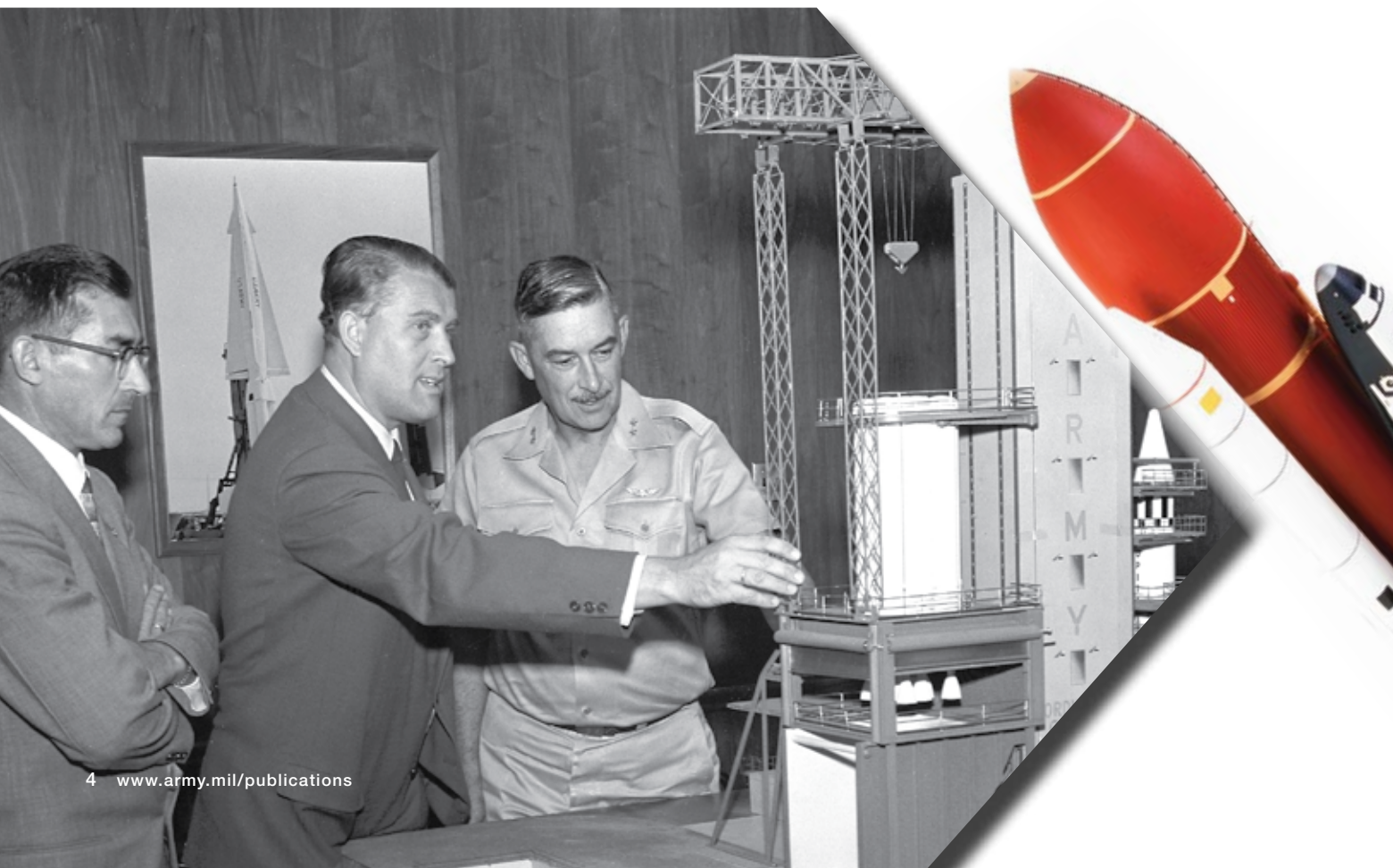
LEGEND has it that in 1924, when he was 12, Wernher von Braun strapped skyrockets to his wagon, ignited them and watched the charged toy soar down a busy Berlin street. While his friends spent summer days admiring the newest Daimlers and Mercedes touring his fashionable neighborhood, von Braun gazed at the

clouds and dreamed of possibilities far beyond.

It would be another 45 long, though fruitful years before he would help land the first man on the moon in July 1969 via his Saturn V rocket. When astronaut Neil A. Armstrong stepped on the lunar surface, von Braun realized part of his own dream of man in space.

The story began long before America's Apollo program or the National Aeronautics and Space Admin-

(From left to right) Karl L. Heimburg, director of the Test Laboratory; Wernher von Braun, director of the Development Operation Division; and Maj. Gen. John B. Medaris with the model of the S-1B Test Stand. Medaris was the commander of the Army Ballistic Missile Agency in Redstone Arsenal, Ala., from 1955 to 1958.



"We always had space on our minds. If we talked about space, though, people thought we were crazy."

istration were born, and long before everyday citizens started to believe that the fantasies that Jules Verne and H.G. Wells wrote about would come true.

Von Braun conducted his earliest official research in Germany in the late 1930s at Kummersdorf, a proving ground about 45 miles from Berlin. He first built small rockets to learn more about guidance systems, said Bernhard Tessmann, a rocket engineer who was responsible for test facilities. Tessmann worked at a Berlin locomotive company when he met von Braun through a colleague in 1936.

"He invited a group of us to dinner at his house one night, but he never got around to cooking it," Tessmann said. "He kept drawing calculations on his blackboard for a rocket to the moon."

"We always had space on our minds," said Karl Heimburg, who began working for von Braun as a mechanical engineer while serving as a private in the German army from 1942 to 1943. "If we talked about space, though, people thought we were crazy. It was too fantastic an idea."

While the men may have talked space, their mission was a military one. Capt. Walter Dornberger convinced Adolf Hitler in the '30s that von Braun's rockets might be a way to circumvent the Versailles Treaty. The treaty ended World War I and prohibited Germany from developing artillery that could fire beyond 15 kilometers – it said nothing about missiles.

To test the missiles, von Braun

needed a location where the rockets could be launched out to sea, Tessmann said. His mother suggested Peenemuende, a small island on the Baltic coast, where his father often hunted and fished. The team began work on missiles, dubbed the "A" series. The first real engine test for the team's A-4 long-range bombardment missile was on May 7, 1938.

After years of refinement, the A-4 became better known as Hitler's Vengeance Weapon 2, or V-2. The first was aimed at Paris in September 1944, and for the next seven months, the Germans would rain another 4,000 on France, England and Belgium.


"In 1944, Gestapo chief Heinrich Himmler tried to recruit von Braun into the SS," Heimburg said. "Von Braun told him: 'If you fertilize and water a plant too much, you'll suffocate it.'"

Von Braun was hauled off to jail but released two weeks later after the intervention of Dornberger, by then a general.

In prewar America, a West Point ordnance officer, Maj. Leslie A. Skinner, was responsible for the Army's rocket program. The Army had assigned him to its new rocket research group of the National Defense Research Committee in Washington, D.C., in 1940. Money for projects never filtered down, however, nor did guidance as to what he was supposed to develop, according to records of the then Army Missile Command.

Skinner benefited from the work of Robert H. Goddard, who had originated the idea of firing rockets powered by liquid fuel for greater propulsion. Unlike Goddard, who had demonstrated a rocket gun at the end of World War I, Skinner and Capt. Edward G. Uhl unveiled their invention at a more opportune time.

In a private workshop, on their own time, the pair created the bazooka, the first workable U.S. military-produced rocket, according to Dave Harris, a spokesman for the then Army Missile Command from 1962 to 1995.



Wernher von Braun stands in front of a Saturn IB launch vehicle at Kennedy Space Flight Center. Von Braun led a team of German rocket scientists, called the "Rocket Team," to the United States, first to Fort Bliss/White Sands, later being transferred to the Army Ballistic Missile Agency at Redstone Arsenal in Huntsville, Ala.

Within months of U.S. involvement in World War II, the Army adopted, produced and fielded the 2.36-inch-diameter, shoulder-fired anti-tank rocket and tube launcher. The first troops to receive it called it "the Buck Rogers gun."

Skinner's success was short-lived. "A general feeling remained that rockets were inaccurate," said Jacob Rabinow, who designed arming systems at the National Bureau of Standards in Washington, D.C. "Officials joked that they couldn't hit the broad side of a barn."

Nevertheless, rocket research continued at the bureau and at industrial firms and technical institutions around the country.

“Just in case we have to go to one country or another, would you be willing to go to America with me?”



Wernher von Braun, Marshall Space Flight Center director, was suited with a space suit and diving equipment at the MSFC Neutral Buoyancy Simulator, Nov. 14, 1967.



The Jupiter rocket was designed and developed by the Army Ballistic Missile Agency. ABMA launched the Jupiter-A at Cape Canaveral, Fla., on March 1, 1957.

Back in Germany, three months after the first successful V-2 launch at Peenemuende in September 1944, the British bombed the site, Tessmann said. “After the raids, we were transferred all over Germany.” Some 400 engineers and scientists were moved to Lehesten, in central Germany. The site contained a test stand, 800 underground combustion chambers and 16 liquid oxygen production plants.

“One night my wife got an urgent call from von Braun. He wanted to see me,” Tessmann said. “Dornberger was at von Braun’s apartment when I arrived, and they were discussing what to do with all the documents we had left in the basement of an old school building in Bleicherode, in the

Harz Mountains. It was April 1945, and we had just learned that Hitler had committed suicide.”

As the Russians advanced, Tessmann and team member Dieter Huzel dodged bullets from the air while leading German soldiers and trucks on a two-day journey to retrieve some 40 tons of rocket sketches, documents and models. Special passes issued by the SS had allowed them to travel freely – until the SS got wind that the von Braun party was moving west, both to surrender and to avoid the Russians.

“As soon as they learned what we were up to, they had orders to kill us,” Tessmann said. The two managed to put everything into a mine in

Doernten and blast the opening, sealing their rocket research from enemy hands.

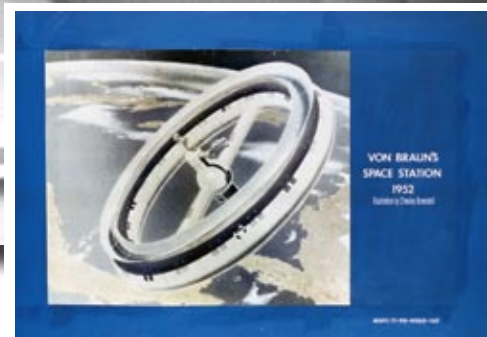
“We were lucky to get out of there alive. Later, when we were gathered with the American Army in Garmisch-Partenkirchen, von Braun asked us, ‘Just in case we have to go to one country or another, would you be willing to go to America with me?’” Tessmann said. The alternatives were Russia and Great Britain.

“For most of us, the prospect of doing research in America was exciting,” Heimburg said. “Most of us had lost everything – our homes, families. All we had ever wanted to do was build rockets to the moon.

“Von Braun had always been the



This photograph was taken after Wernher von Braun moved from his post as director of the Marshall Space Flight Center to deputy associate administrator for planning at NASA Headquarters. On June 27, 1970, he visited the MSFC again during the Center's 10th anniversary, to look at a mockup of the spacecraft that would later be known as "Skylab."



Wernher von Braun's 1952 space station concept, illustrated by artist Chesley Bonestell.

inspiration. He'd say, 'If you want to dance, you need music. If you want to do big things, you need money.'" Heimburg said.

"The superpowers evolved from the dissemination of the German expertise between 1945 and 1947," Rabinow once said. "A U.S. Army officer saw that America would be one of those powers."

Col. Holger N. Toftoy (later major general) spearheaded "Operation Paperclip," the Army's code name for identifying those who would be allowed into the United States. Paperclips were attached to the background files of prospective recruits, after careful scrutiny that they hadn't

participated in any war crimes or SS activities.

Toftoy had gone to Germany as chief of ordnance technical intelligence after the invasion of Normandy. He examined and reported on captured German rocket facilities, according to Harris.

After meeting the von Braun team, Toftoy suggested to U.S. officials that 300 to 400 of the German engineers and scientists be recruited to develop a U.S. rocket program.

The State, War and Navy departments collaborated, but hesitated. Political issues lengthened the red tape. When approval finally came in 1945, the number of recruits was limited to

Paperclips were attached to background files of prospective recruits, after careful scrutiny that they hadn't participated in war crimes or SS activities.



Twelve scientific specialists of the Peenemuende team stand at the front of Building 4488, Redstone Arsenal, Huntsville, Ala. They led the Army's space efforts at ABMA before the team transferred to the National Aeronautics and Space Administration's George C. Marshall Space Flight Center. (Left to right) Dr. Ernst Stuhlinger, Dr. Helmut Hoelzer, Karl L. Heimburg, Dr. Ernst Geissler, Erich W. Neubert, Dr. Walter Haeussermann, Dr. Wernher von Braun, William A. Mrazek, Hans Hueter, Eberhard Rees, Dr. Kurt Debus, and Hans H. Maus.

100. Toftoy, at the time chief of the U.S. rocket group, disregarded the limit and arranged to bring over 118 engineers and scientists.

"A ship sailed in November 1945 with about 100 friends and GIs going home," Tessmann said. "When we arrived at Fort Strong, in Boston, intelligence officers asked us all sorts of questions and required us to take lie-detector tests."

From there he traveled to Aberdeen Proving Ground, Md., to help sort the rocket documents, since recovered from the mine. Later, the Army sent him to Fort Bliss, Texas, as a facility expert. Most of the others in the group were sent to Fort Bliss or nearby White Sands Missile Range, N.M., then a proving ground; Heimburg emigrated a year later.

During their first five years in America, the team's talents lay pretty much dormant, Heimburg said. They did little more than assemble and demonstrate the V-2s for U.S. officials and members of the Ordnance

Corps' 930th Technical Support Group with whom they were assigned.

The big break came in 1949, when the Army centralized its rocket and missile program and moved the von Braun team and the 930th to Huntsville, Ala., to develop ballistic missiles and space-launch vehicles, Harris said.

The announcement was a shock; at the height of the war, more than 19,000 employees had worked at Redstone Ordnance Plant, loading boxcars full of munitions. After the war, the arsenal was on the government auction block and had only 200 employees remaining. Huntsville, population 12,000, had become a sleepy county seat, where watercress was king and cotton fields dotted the red-clay landscape.

"Suddenly the local people were confronted by scientists who talked about research and development," Harris said. "They said 'R and D' meant 'rest and dream,' because they

"They said 'R and D' meant 'rest and dream' because they noticed the von Braun team spent lots of time looking into space and writing on blackboards."

noticed the von Braun team spent lots of time looking into space and writing on blackboards.

"1950 was a time of great urgency," he said. North Korea invaded South Korea, feeding America's fear of yet another U.S. military involvement. The arsenal bustled again with





President John F. Kennedy, Vice President Lyndon B. Johnson and Marshall Space Flight Center Director Wernher von Braun at the Redstone Arsenal Airfield, Sept. 11, 1962. Kennedy and Johnson visited the Marshall Center to tour national space facilities.

the advent of ballistic missiles.

The von Braun team built early U.S. military rockets at Huntsville Arsenal, now named Redstone Arsenal and the home of the U.S. Army Space and Missile Defense Command/Army Forces Strategic Command. One such rocket was the Redstone, the first large ballistic guided missile that could carry a nuclear warhead 200 miles. After the Redstone came Jupiter, a ballistic missile with a 1,500-mile range.

"In October 1957, the Russians put up Sputnik I, the first satellite," Harris said. The Army launched the West's first satellite, Explorer I, in January 1958 via a modified Redstone called the Jupiter-C.

The space race had begun.

The most exciting work for the von Braun team was the eight-year

Saturn program, Heimburg said. He was responsible for test stands that could survive millions of pounds of thrust during simulated pre-flights. Von Braun was in charge of the overall effort.

President Dwight D. Eisenhower established NASA in 1958 and two years later transferred 4,000 employees, including most of the von Braun team, and \$100 million of equipment from the arsenal to NASA's George C. Marshall Space Flight Center, also in Huntsville. Von Braun became the center's first director and continued work on the Saturn program.

In the glory days, Saturn rockets would carry satellites and Apollo astronauts into space between 1961 and 1972, and transport Skylab into orbit in 1973.

Today's jet airplanes and missiles, and tomorrow's space ships that may shuttle people to the moon or other planets, are all outgrowths of the research and development conducted by the

von Braun team and other pioneers, such as Goddard and Skinner.

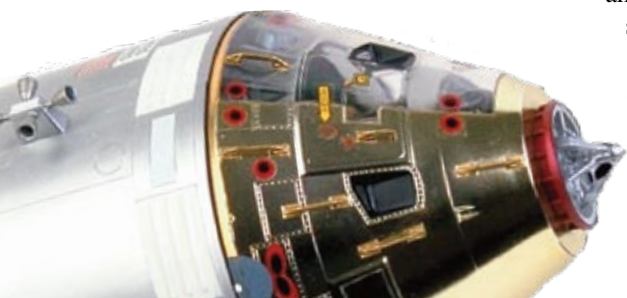
The fledgling military rockets gave way to a continuing U.S. quest to explore space and use space assets for the good of mankind.

Von Braun died in 1977 at 65, while serving as vice president of Fairchild Industries in Germantown, Md. Presidents said he had changed the world in his 20 years in Huntsville and later as NASA's chief planner in Washington, D.C.

Tessmann retired following numerous positions in industry and service with the Atomic Energy Commission. He died in 1998. Heimburg moved with the German rocket team to NASA in 1960 and retired in 1973. He died in 1997.

Toftoy commanded Redstone Arsenal from 1954 to 1958 and then Aberdeen Proving Ground, Md., until he retired in 1960. He died in 1967.

Dave Harris died in December 2002. sm



Army

Space Soldiers

Story by Heike Hasenauer



Nearby waters reflect the flames of the space shuttle Endeavour as she lifted off Nov. 30, 2000, carrying the STS-97 crew of five. Endeavour is scheduled to carry Lt. Col. Robert Shane Kimbrough and other members of the STS-126 crew to the International Space Station in November.

SPACE Soldiers," the men and women assigned to the U.S. Army Space and Missile Defense Command/U.S. Army Forces Strategic Command, perform myriad, oftentimes little-known, missions using space as their springboards to support U.S. military commanders and civilian organizations both at home and abroad.

Most publicized in the commercial media are the many contributions made by NASA astronauts, among them seven Army officers who are assigned to SMDC/ARSTRAT and

attached to the Astronaut Detachment at the Johnson Space Center in Houston.

There, the active-duty and retired Soldiers prepare for space flights aboard one of NASA's shuttles or the Russian Soyuz rocket for missions to the International Space Station and beyond.

Next month, 41-year-old Lt. Col. Robert Shane Kimbrough will be among a six-member crew soaring into space aboard space shuttle Endeavour, or STS-126, the 126th flight of the space transportation system,

from the Kennedy Space Center in Florida.

"In roughly eight minutes the shuttle will race into the heavens atop a brilliant orange pillar of fire, hurtling (Kimbrough) from zero to six times faster than a speeding bullet, about 18,000 mph into space," said retired astronaut Col. James Adamson, who himself flew into space three times in the 1990s. "He'll be sitting about 10 stories high, on top of 5 million pounds of hydraulics, with 500,000 pounds of main engine thrust beneath him."

Every day, Kimbrough — who's never before traveled into space — can expect to witness 18 breathtaking sunrises and sunsets.

The first two minutes of the ride will be “rough and rickety, like riding a hay wagon down a cobblestone street,” Adamson said.

“During the next six minutes, he'll be pulling three ‘Gs’ in the chest. It'll feel like having an elephant sit on you, as pressure continues to build up before the solid rocket boosters break away and the whole vehicle gets lighter and accelerates,” Adamson said.

Then, the engines will cut off, the crew will be weightless, and Kimbrough will be able to float around upside down, Adamson said. From one of the shuttle windows, he'll be able to catch his first breathtaking view of earth from space. “It's this giant blue and white ball, with millions of stars around it. It's just gorgeous.”

Every day, Kimbrough — who's never before traveled into space — can expect to witness 18 breathtaking sunrises and sunsets, NASA officials said.

How the astronauts spend their time in space will be very much regulated, Kimbrough said, and will include eight hours of sleep and a certain amount of exercise daily.

“Once the alarm goes off, we'll be going nonstop,” Kimbrough added.

STS-49, the first flight of the space shuttle Endeavour, lifted off from launchpad 39B on May 7, 1992, at 6:40 p.m. CDT.



NASA Photos



NASA Photo

Lt. Col. Robert Shane Kimbrough, mission specialist, is one of several Army astronauts scheduled to go into space in the next few years.

The astronauts will be able to use an exercise bike and resistance-training device — basically “a bunch of bungy cords” — to work muscles in the upper and lower body, he said.

During down time, they'll be able to communicate with their families via e-mail several times a day, Kimbrough said. “And once we're at the International Space Station, we'll

Backdropped by space and Earth's horizon, Endeavour's orbital maneuvering system pods and vertical stabilizer are visible in this image taken while docked with the International Space Station during the STS-118 mission.



A fellow astronaut fits Lt. Col. Robert Shane Kimbrough, STS-126 mission specialist, with an Extravehicular Mobility Unit spacesuit.





En route to the International Space Station, space shuttle Endeavour and its seven-member STS-118 crew, blasted off from the launchpad at Kennedy Space Center Aug. 8, 2008. The STS-126 crew will travel to the ISS in November, delivering equipment, food, clothing and other items.



Lt. Col. Shane Kimbrough and his fellow STS-126 crew members will be able to catch breathtaking views of Earth from space.

be able to call down to Earth via IP phone.” People on Earth won’t be able to call up, “but we’ll be able to call down.”

The crew for the upcoming mission was assigned in September 2007 and immediately began undergoing individual training for their respective roles in space and participating in team-building exercises, said Kimbrough, who will serve as a mission specialist, using a giant robotic arm to grasp things and move them about.

“The shuttle missions now are all focused on delivering pieces of the International Space Station, to accommodate a crew of six, versus the three who have typically spent months at the station, Kimbrough said.

“We’ll be taking up galley equipment, food, clothing and beds, among other things, and will fill the shuttle with things to take down,” he added.

Endeavour will carry a reusable logistics module that will hold

STS-126 mission specialist Lt. Col. Robert Shane Kimbrough is submerged in the waters of the Neutral Buoyancy Laboratory near Johnson Space Center. Kimbrough is wearing a training version of the Extravehicular Mobility Unit spacesuit. SCUBA-equipped divers (out of frame) are in the water to assist him in the rehearsal, intended to help prepare him for work on the exterior of the International Space Station.





The background photo is one of a series of 70mm frames exposed of the International Space Station following undocking. The remaining shuttle missions will focus on delivering equipment and supplies to the ISS to accommodate larger crews.

NASA's 2004 class of astronaut candidates and training staff posed for a group photo in a KC-135 aircraft prior to a series of reduced-gravity sessions provided by special parabolas over the Gulf of Mexico. Lt. Col. Robert Shane Kimbrough is in the center row, fourth from the left.

supplies and equipment, including additional crew quarters, a treadmill, equipment for the regenerative life support system, and spare hardware, he said.

On the third day of the mission, Endeavour will dock with the ISS to drop off the equipment and one astronaut who will remain on station for two to six months. When the shuttle departs the ISS, it will bring home an astronaut who's been at the station for several months.

Kimbrough is excited about the possibility of performing four spacewalks to repair SARJ, the solar alpha rotary joint-solar ray that tracks the sun. The EVAs – or extravehicular activities – are scheduled to begin on day five in space, and each of the walks is expected to last from six to

seven and a half hours.

Kimbrough was selected for Astronaut Candidate Training in May 2004, after applying through the Army's biennial astronaut-selection board, convened by the deputy chief of staff for personnel.

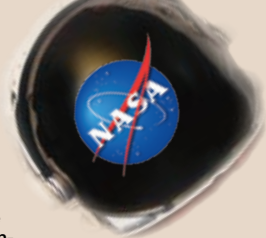
He underwent hundreds of hours of classroom and simulator training, experiencing the weightlessness of space from the bottom of a swimming pool and inside a specially designed KC-135 tanker aircraft.

Kimbrough completed the training in February 2006, which

The sixth International Space Station assembly flight, STS-100, blasted from the launchpad aboard space shuttle Endeavour April 19, 2001.



NASA Marshall Space Flight Center



(Left photo) Astronauts Sandra H. Magnus (foreground), Expedition 17/18 flight engineer; Lt. Col. Robert Shane Kimbrough and Navy Capt. Heidemarie M. Stefanyshyn-Piper, all STS-126 mission specialists, give a "thumbs up" signal during a training session in one of the full-scale trainers in the Space Vehicle Mockup Facility at Johnson Space Center. Attired in training versions of their shuttle launch and entry suits, the three are seated on the mid-deck for a post-insertion/de-orbit training session.

included scientific and technical briefings, intensive instruction in shuttle and ISS systems, physiological training, T-38 flight training, and water- and wilderness-survival training.

"The material is very complex," Kimbrough said of the many manuals he's had to "digest" in preparation for his mission. "I'm primed on malfunction procedures – what to do if something goes wrong."

Kimbrough first came to work for NASA in September 2000, when he was assigned to the agency's Aircraft Operations Division at Ellington Field in Houston as a flight-simulation engineer on shuttle training aircraft.

"I've wanted to do this my whole life," Kimbrough said of his upcoming voyage into space. As a teenager, space was very much on his mind. "I

always saw the shuttle launches, because my grandparents lived right across the street from the Kennedy Space Center and my mom and dad also grew up in Florida, where the space program was practically in their backyard. So, early on in my Army career, I started proceeding toward (becoming an astronaut)."

Kimbrough received a Bachelor of Science degree in Aerospace Engineering from the U.S. Military Academy at West Point, N.Y., in 1989. That same year he was commissioned a second lieutenant and entered the U.S. Army Aviation School, becoming an Army aviator in 1990. He was assigned to the 24th Infantry Division at Fort Stewart, Ga., and deployed with the unit to Southwest Asia during Operation Desert Storm.

While with the 24th, he was an attack helicopter platoon leader, aviation liaison officer and attack helicopter battalion operations officer.

In 1994, he was assigned to the 229th Avn. Regiment at Fort Bragg, N.C., where he commanded an



Lt. Col. Robert Shane Kimbrough (3rd from the left) assembles with fellow NASA astronaut candidates for a group photo during 2004 ASCAN navigation training in the wilderness of Maine.

NASA photos

Equipped with SCUBA gear, NASA's 2004 class of astronaut candidates participates in a training session in the Neutral Buoyancy Laboratory near Johnson Space Center. Lt. Col. Robert Shane Kimbrough is pictured at the top.

Apache helicopter company.

He earned a Master of Science in Operations Research from the Georgia Institute of Technology in 1998 and was assigned as an assistant professor in the USMA's Department of Mathematical Sciences.

Kimbrough completed the Army Parachutist Course, Army Jumpmaster Course, German Airborne Course, the Combined Arms Services Staff School, and the Command and General Staff College.

He's married, has three children, a boy, 8, and twin daughters, 10, and in his spare time enjoys baseball, golf, weightlifting and running.

"I feel blessed to be here representing the Army at NASA," Kimbrough said. "When I'm down at the cape (Kennedy Space Center, also known as Cape Canaveral), I get those chill-bump moments, when I can picture Endeavour blasting off, and pride in the mission just takes over.

"Everyday I'm pinching myself to make sure I'm really here," Kimbrough said. **sm**

NASA photo

New Mexico

The SUGV, or Small Unmanned Ground Vehicle, takes a look around Doña Ana Range Complex.

— Photo by Stephen Baack





Transition Team Experience Makes Officers Competitive for Promotion

THE chief of staff of the Army recently acknowledged the importance of service by Army officers on military transition and provincial reconstruction teams in Iraq and Afghanistan.

“Soldiers that serve on our transition teams and our provincial reconstruction teams are developing exactly the type of knowledge, skills and abilities that are vital for our Army to be effective in an era of persistent conflict,” said Gen. George W. Casey Jr. in a recent memo.

Now, boards that review officer records for promotion or for selection to command must consider service on TTs or PRTs as equivalent to other branch-specific “key developmental” positions such as battalion operations or battalion executive officer.

The move both recognizes the importance of transition-team service and helps alleviate concern on the part of some majors that a tour of



Tech Sgt. William Greer, USAF

Army Maj. John Atilano and Maj. Scott Hedberg, both from 2nd Tank Battalion, 34th Armor Brigade, 9th Iraqi army division (mechanized) Military Transition Team, observe Iraqi soldiers receiving night vision familiarization at a check point near Camp Taji, Iraq. Majors who serve 12 months on any transition team will be considered to have met the key developmental career requirements for their branch.

duty within a transition team might adversely affect the career path they have charted for themselves, said Lt. Col. Steve Warren, a career manager with the U.S. Army Human Resources Command.

“There is hesitance in the field about going on TTs because officers are nervous that the time they spend on TTs is time away from their basic branch, and that this will then disadvantage them from promotion,” he said. “This message removes that.”

The chief of staff’s message also adds transition team command slots to the list of potential positions to be filled by lieutenant colonels on a

Centralized Selection List. The command billets of as many as 35 transition teams have now been identified.

To comply with his directions, a new CSL sub-category called “Combat Arms Operations” is being created. The sub-category is open to eligible maneuver, fires and effects officers as well as foreign area officers. The sub-category will fall under the Operations category and will be effective with the fiscal year 2010.

— *C. Todd Lopez, ARNEWS*

DLI Offers Free Online Language Materials

THE Defense Language Institute has launched a Web site that offers hundreds of “language survival kits” and other materials free of charge to deploying service members.

DLI’s Foreign Language Center developed the Language Materials Distribution System Web site and went live in July. To view the shopping cart, go to <http://lmds.dliflc.edu>.

The language Survival Kits offered on the Web site are pocket-sized booklets with audio CDs, in more than 30 languages, ranging in topics from public affairs, cordon and search, to medical terminology.

DLIFLC also offers new Headstart language DVD programs that use cutting-edge technology and computer animation to enhance 80 hours of self-paced lessons designed to teach survival phrases in Iraqi Arabic, and Afghan Dari and Pashto.

Language materials can be viewed, downloaded and ordered at www.dliflc.edu under the Products tab. Users must register and receive DLIFLC account approval before placing an order. Some products are not available for download to the general public, officials said.

— *ARNEWS*



DOD Sets Joint Standards for Enlistee Waivers

THE Department of Defense has now set standards for how individual services will offer conduct waivers to those it recruits.

The policy, announced in July, standardizes how the Army and other services classify offenses, how many offenses a recruit may have committed before requiring a waiver, and in what combination those offenses may have been committed.

“Terms like felony and misdemeanor get confounding. What is a felony in one state is not in another. And what is a misdemeanor is the same thing,” said Bill Carr, deputy under secretary of defense for military personnel policy.

Now the department has classified individual offenses into four categories. The classification for each of those offenses is based on how “most states” classify the offense. If an offense like grand theft auto is a felony in most states, it would be classified as “major misconduct,” Carr said.

Other categories include “misconduct,” which would be offenses that in most states are classified as misdemeanors; “non-traffic,” such as not depositing change at a tollbooth; and “traffic offenses.”

The department gave examples of how many instances of misconduct a recruit might have before requiring a waiver: one major misconduct requires a waiver; two misconducts requires a waiver; one misconduct, along with four non-traffic offenses, requires a waiver.

The services remain free to create their own stricter policies, Carr said. He also said the department has found



Lt. Col. Robert Larsen, commander of the Baltimore Military Entrance Processing Station, administers the oath of enlistment to 28 new recruits during a swearing-in ceremony. The Department of Defense recently set joint standards for allowing services to offer moral waivers to recruits. While the Army does offer such waivers to some new recruits, it is not lowering standards for Soldiers, officials said.

that problems with recruits are more likely to happen with those who have a pattern of minor offenses rather than with those who have only a single major misconduct offense.

An Army study showed that the differences between Soldiers who entered service with conduct waivers and those who did not are negligible — the Army lost about 2.3 more waiver Soldiers per 100 due to “adverse losses” than it did among the non-waiver population.

“Statistically, it is kind of insignificant,” said Lt. Col. Val Siegfried, the Army G-1 branch chief for enlisted accessions.

— C. Todd Lopez, ARNEWS

Army Reserve, D.C. Police Sign Partnership

THE Army Reserve and one of the 10 largest police departments in the nation have signed a partnership that will allow both organizations to recruit, train and employ men and women desiring to serve the nation and their community.

The District of Columbia Metropolitan Police Department became the fifth organization to enter an employee partnership with the Army Reserve. Inova Health Systems, the American Trucking Associations, Con-way Freight and the Crowley Auto Group have also signed such partnerships.

D.C. Chief of Police Cathy L. Lanier said the partnership was “a great step for all of us to show not only can we work a partnership to protect our country, but to come home and protect our community.”

Col. Vincent Taylor, chief of staff for the new 200th Military Police Command headquartered at Fort Meade, Md., said Reserve Soldiers and police officers will be training together and working side-by-side looking for opportunities to serve each other.

“Most importantly, the reservists will have opportunities to work on the Metro Police Department and the Metro Police Department will have the opportunity to serve with the Army Reserve.”

Sgt. Scott Dignan of the 400th Military Police Battalion was on the D.C. police force before he joined the Army Reserve and serves as a lieutenant in charge of the metro SWAT team.

“I think by tapping into the Army Reserve we’re going to bring high-quality applicants into the MPD who have the discipline and the seven Army core values,” Dignan said.

— J.D. Leipold, ARNEWS

Army Astronauts

Story by Heike Hasenauer



NASA photo

Astronaut Col. William S. McArthur (Ret.) (left), Expedition 12 commander and NASA space station science officer, and cosmonaut Valery I. Tokarev, flight engineer representing Russia's Federal Space Agency, pose with a U.S. Extravehicular Mobility Unit spacesuit (left) and Russian Orlan spacesuit in the Destiny laboratory of the International Space Station, March 5, 2006. McArthur, a retired Army colonel, has traveled into space four times.

JUST as the Army has its “navy,” — something that sounds like a misnomer but isn’t — it has its space, not a prescribed area of land but limitless avenues in the universe that have yet to be charted.

Active-duty and retired Soldiers of NASA’s Astronaut Detachment are among some 90 astronauts (which include members of the other services and civilians) at the Johnson Space Center in Houston, who are today’s space pioneers. As they work to complete construction of the International Space Station, they’re charting new frontiers.

In the not-too-distant future, the ISS will be a home base in space from which space travelers will further explore the universe — the Moon, Mars, Jupiter and beyond, said Astronaut Detachment spokeswoman Lou Moss.

Col. William McArthur Jr. (Ret.) has traveled into space four times, beginning in 1993, and he said each mission was unique. The first time he went up aboard the shuttle Columbia. The crew performed cardiovascular, cardiopulmonary, metabolic and musculoskeletal experiments on themselves and 48 rats to learn more about how spaceflight affects humans and animals.

Besides conducting other experiments, they made contact with school children and amateur radio operators around the world, through the Shuttle Amateur Radio experiment.

On his second mission, McArthur flew aboard Atlantis, which rendezvoused and docked with the Russian Space Station Mir in November 1995. In addition to conducting numerous experiments, the crew attached a permanent docking module to Mir and transferred 1.5 tons of supplies to the space station.

MacArthur’s third trip up, this time aboard Discovery in October 2000, took him to the International Space Station, to attach parts using Discovery’s robotic arm, readying

the ISS for its first resident crew. He performed four spacewalks, logging 13 hours and 16 minutes outside the spacecraft.

The October flight, STS-92, was only the third shuttle flight dedicated to building the ISS at a time when, according to McArthur, “nobody was onboard and no one had visited.”

His September 2005-to-April-2006 mission brought him back to the ISS, this time via the Russian Soyuz spacecraft from the Baikonur Cosmodrome in Kazakhstan. He remained at the station for six months.

Col. Jeff Williams (Ret.), currently training for a fall 2009 launch and six-month stay on the ISS, was the first active-duty Army officer to live aboard the ISS for months at a time, from March 31 through Sept. 28, 2006.

“The ISS had experienced five and a half years of permanent human presence by that time,” Williams said. It wasn’t the skeletal apparatus it was when he first laid eyes on it. On the later trip, he also experienced being launched into orbit aboard the Soyuz versus the shuttle.

“They’re both rockets to get you



Expedition 12 Commander, Col. William S. McArthur (Ret.), pictured, and flight engineer Valery Tokarev, the 12th crew of the International Space Station, landed in the steppes of Kazakhstan in their Soyuz spacecraft after 190 days in space.



Astronaut Buzz Aldrin, lunar module pilot, walks on the surface of the moon near the leg of the Lunar Module “Eagle” during the Apollo 11 extravehicular activity, July 20, 1969. NASA plans to further explore the moon in the future.



A Soyuz spacecraft lifts off from the Baikonur Cosmodrome, Kazakhstan, at 10:54 p.m. (CDT) on April 26, 2003. Col. Jeffrey N. Williams (Ret.), is scheduled to travel to the International Space Station on a Soyuz spacecraft in 2009.

(Small photo) With the launch of a Soyuz rocket, cosmonaut Pavel V. Vinogradov, Russia's Federal Space Agency Expedition 13 International Space Station commander, and astronaut Col. Jeffrey N. Williams (Ret.), NASA International Space Station flight engineer and science officer, began their mission in March 2006.

to orbit," Williams said. "But the similarities end there."

In the Soyuz, "you're like one of three triplets in a womb; the shuttle is designed to carry seven astronauts. You pull more Gs in the Soyuz, too," Williams said. "You re-enter the atmosphere at a steep angle, taking four Gs and as much as eight Gs. It's a parachute entry (whereby a parachute is released from the spacecraft to slow it down). So, it's a pretty violent experience."

For his 2009 mission to the ISS aboard Soyuz, Williams has been undergoing training in Japan on a Japanese module that will be attached to the ISS and used for conducting experiments, among them experiments "to prepare us to mitigate the affects of weightlessness, so we can send crews to the moon and Mars," Williams said.

He likened the upcoming trip to "a long deployment to a combat zone; you can't count the days you'll be there, because they're too many. There's some risk, and it's a long time to be away from your family, because you can't just come home."

Williams is married and has two sons, 26 and 23.



NASA's Mars Exploration Rover Spirit captured this westward view from atop a low plateau where it spent the closing months of 2007. Future NASA missions will focus on exploring the moon, Mars and beyond. Image Credit: NASA/JPL-Caltech/Cornell University

Col. Tim Creamer will be at the ISS part of the time Williams is there. "Jeff will be up a month before me," said Creamer, who will serve as science officer aboard the ISS. "I'll be the robotics guy – 'EVA-able,' (authorized to conduct extravehicular activities, or spacewalks)."

Between April and July 2008, Creamer went to Canada, Germany, Russia, Ukraine and Japan for training to prepare him for the mission.

He's undergone Soyuz-simulation training, sea- survival training and training on the intricacies of the Japanese module for the ISS.

Additionally, he experienced 25 seconds of parabolic flight in a C-9 aircraft, fondly referred to by the astronauts as the "vomit comet," because of its stomach-churning descent from a high altitude and the nausea and vomiting that can ensue. He also worked with the SPDM, special-purpose dexterous manipulator (robot arm), which "looks like a cowboy," Creamer said. It has two arms that can grab things and turn screws, precluding humans, in some cases, from having to do spacewalks.

When a Japanese delivery vehicle "as big as a house" arrives at the ISS, Creamer will be expected to use the robotic arm to grab it and perform what's called a "free-flyer capture," he said. "I have to be good, because if I bump it, it could spin away."

One of the last astronauts scheduled to go up on one shuttle



NASA photo



Astronaut Col. Jeffrey N. Williams (Ret.), mission specialist

Astronaut Col. Jeffrey N. Williams (Ret.), Expedition 13 NASA space station science officer and flight engineer, is photographed during a 5-hour, 54-minute excursion which he shared with European Space Agency astronaut Thomas Reiter (out of frame), Aug. 3, 2006. For part of the spacewalk, the pair worked closely in tandem, and then worked separately, getting ahead of their timeline, thus enabling the two to tack on extra tasks.

and come down on another in May 2009, Col. Timothy Kopra expects to spend three months on the ISS. While there, he'll install a piece of hardware on the Japanese-owned laboratory module, allowing a telescope to be attached to it, and he'll replace batteries outside the ISS.

"We'll launch from the Kennedy Space Center and dock with the ISS two and a half days later," Kopra said. It doesn't take that long to arrive 200 miles in space,


it takes that long for the shuttle to complete 35 to 40 orbits of the Earth and catch the ISS, which is orbiting at 17,500 mph.

"Up to now there have been three people on board the ISS. We'll have a crew of six," said Kopra, who added he might get a case of nerves closer to his launch date, but isn't feeling them now. "I've been training for three and a half years for the mission, so I'm just anxious to get there."

Expedition 13 and STS-115 crew members reunite onboard the International Space Station soon after docking, Sept. 11, 2006. A smiling cosmonaut Pavel Vinogradov, Expedition 13 commander representing Russia's Federal Space Agency, floats into the scene, joining (from left) astronauts Col. Jeffrey N. Williams (Ret.), Expedition 13 flight engineer and NASA station science officer; Brent W. Jett Jr., STS-115 commander, and Daniel C. Burbank, STS-115 mission specialist.



NASA photo



Astronaut Col. Jeffrey N. Williams (Ret.), mission specialist, appears suspended over Earth in this 70mm photograph documenting part of the 6-hour, 44-minute space walk that he shared with James S. Voss in May 2000. Williams and Voss also secured a U.S.-built crane that was installed on the station; replaced a faulty antenna for one of the station's communications systems; and installed several handrails and a camera cable on the station's exterior.

Kopra said he never had expectations to become an astronaut, “until it happened. In the ‘60s, when I was growing up, every kid wanted to be an astronaut or a fireman. One of the Apollo-mission astronauts talked to my school class, and then I realized the idea of becoming an astronaut was achievable,” Kopra said.

Today, 17 countries are supporting the ISS and its scientific experiments, Creamer added. And, while the Army represents the smallest contingent of the joint-services Astronaut Detachment — which is primarily composed of Navy and Air Force personnel — “the amount of time we’ve spent on the ISS way over-represents the time our sister services have spent there,” McArthur said.

“The shuttle mission goes up, and it’s a sprint to maximize NASA’s investment,” said Creamer. The astronauts who train to spend months on the International Space Station “train for a marathon.”

“‘Be All You Can Be,’ was the Army advertising slogan when I was a second lieutenant,” said McArthur. “It encouraged Soldiers to be the best they could be then, and it still holds true today.”

Of the roughly 15 Army astronauts who have served so far, the majority have graduated from the U.S. Military Academy at West Point, N.Y., and most have been test pilots, which makes sense when they have to fly the shuttle, Creamer said.

But NASA plans to discontinue the shuttle program in 2010, and

astronaut requirements will change as future space transportation and delivery systems change, NASA officials said.

Williams’ advice to Soldiers who dream of reaching the stars? “You have to have an interest, a passion. There’s a long path toward becoming an astronaut, because by the time you’re qualified, a lot of time will have gone by. Do a good job at whatever you do.”

While there’s only a .7 percent chance of being selected to the Astronaut Program, according to Creamer, “NASA’s looking for someone who’s adaptable — who can do a job with a sense of duty and responsibility,” Williams added.

“Don’t put all your eggs in one basket — but, if you want something badly enough, be consistent. I applied six times over 10 years to the Astronaut Program before I was accepted,” Williams said. **sm**

Astronaut Requirements

THE first U.S. astronauts were all service-members, and all were selected for the U.S. space program in 1959, before manned spaceflight had even taken place, NASA officials said.

NASA had queried the services for names of prospective astronaut candidates who met specific qualifications. At that time, the seven nominees were all pilots. And all were men.

Rear Adm. Alan B. Shepard (Ret.) became the first American in space on May 5, 1961, aboard the Freedom 7 spacecraft. He returned to space in January 1971 as commander of Apollo 14, the third lunar landing mission.

When NASA began concentrating on a space-shuttle program in 1976, the Defense Department agreed to help furnish astronauts, and each service began conducting its own astronaut-selection board, NASA officials said.

In 1978, Lt. Col. Robert L. Stewart became the first Army candidate selected

by NASA. He flew as a mission specialist on two shuttle flights. During an eight-day voyage in 1984, he conducted the first space operations using a manned maneuvering system, or jetpack.

In 1985 he was among the crew on a classified DOD mission. Stewart, who later became a brigadier general and commanded the Strategic Defense Command, logged 289 hours in space.

While the United States, Russia and China are the only countries that have launched manned spacecraft, other nations have sent their space travelers aboard those spacecraft.

As of the end of May 2008, 482 people from 39 countries had traveled into space, among them commercial "astronauts," travelers not connected to the military or civilian space agencies who have paid to fly aboard Russian spacecraft.

Soldiers interested in becoming astronauts have a chance to do so every two years. That's

when the Army's Astronaut Screening Board selects candidates for nomination to NASA. The next board will convene in May 2009.

Prerequisites for astronaut candidate selection include:

- ♦ A bachelor's degree or higher in engineering, biological science, physical science or mathematics from an accredited institution and three years' experience related to the degree;
- ♦ Applicants must pass a NASA Class II space physical similar to the Army Class II flight physical, have distant visual acuity of 20/300 or better uncorrected and correctable to 20/20 for each eye, minimal hearing loss, blood pressure not exceeding 140/90, and be between 58.5 and 76 inches tall;
- ♦ And be a U.S. citizen.

Applicants for pilot-astronaut-candidate-selection must have at least 1,000 hours pilot-in-command time in jet aircraft.

For more information contact the U.S. Army Space and Missile Defense Command/Army Forces Strategic Command Public Affairs Office at (256) 955-3887. — Heike Hasenauer

Astronauts Col. Jeffrey N. Williams (Ret.) (bottom) and James S. Voss work with the newly delivered main boom of the Russian crane (Strela). The two were later successful in attaching the boom to its operator post.

NEEMO 11 astronauts/aquanauts Col. Timothy L. Kopra and Col. Timothy J. Creamer (inside habitat) take a moment to pose for a photo during a dive session for the NASA Extreme Environment Mission Operations (NEEMO) project, Sept. 17, 2006. Both are scheduled for trips to the International Space Station in the next two years.





America's Haunted Army

Jacqueline M. Hames

GHOST stories have long fascinated the living. Some seek the thrills, others are searching for answers about the afterlife. People can find both the exhilarating and the enlightening on several Army posts.

Many installations have reported strange occurrences and ghostly activity, ranging from prank-playing poltergeists to terrifying visions. Some bases are haunted by long-forgotten Soldiers, some by civilians, and some are troubled by the unidentifiable paranormal.

Built in 1832, the Rookery is the oldest building on Fort Leavenworth. It currently serves as family quarters and is said to be haunted by several ghosts. The most vengeful presence in the quarters is the ghost of a woman with long hair, who charges victims with arms extended and fingers clawing.

New Jersey Devils

Fort Dix, N.J., has its fair share of paranormal activity. In addition to sightings of the infamous Jersey Devil by Soldiers during World War II and again in the 1990s, Walson Hospital is said to be haunted.

Walson is one of the most active spots on the installation. Accounts of strange light orbs, unexplained drops in temperature and sightings of ghostly visitors abound. The former basement morgue and psychiatric ward are usually where the eerie stories originate.

Dameyon Beamon, a member of the 305th Medical Group at Walson from 1995 to 1997, said he encountered strange happenings there.

"I worked nights at the primary care clinic," Beamon said. "On many occasions when we would do security checks, the front door that used to be the pharmacy entrance would be unlocked, even if only an hour ago it was locked tight."

One night, Beamon and a co-worker went to the ninth floor, the former psychiatric ward, and noticed an open window in one of the rooms.

"At the precise moment Clark closed the window, the light in the room flickered, turned off and then came back on," he said.

Beamon added that he also came across a supernatural phenomenon while exploring the

old morgue. While looking at pictures from events that had taken place in the morgue, he heard "the sound of a grown man crying."

Huachuca Hauntings

Several of the more gruesome tales of ghosts come from Fort Huachuca, Ariz., where many apparitions are linked to tragic, untimely deaths. Hangman's Warehouse is reportedly haunted by two Soldiers who were hung in 1942: Pvt. James Rowe and Staff Sgt. Jerry Sykes, who both committed murder within two weeks of each other, according to Cornelius C. Smith's book, "Fort Huachuca: The Story of a Frontier Post."

Quarters Number 9, Carleton House, has the most documented hauntings on post. Constructed in 1880, it was built as an eight-bed hospital and has since been used as officers' quarters, mess, schoolhouse and chapel. When Carleton House was a hospital, a woman dubbed "Charlotte" died in childbirth there. It is reported that her ghost still wanders the halls, searching for her child. One family who lived in the house had a young daughter who had seen Charlotte, but referred to her as "Barbie." The girl often spoke about Barbie coming to visit, reading her stories or carrying on conversations. A rocking chair in the girl's room was said to move by itself, presumably because Charlotte was sitting in it.

Recently, during a renovation of the building, contractors repeatedly reported finding doors that had been



locked at night and open in the morning. Tools that had been put away were found scattered.

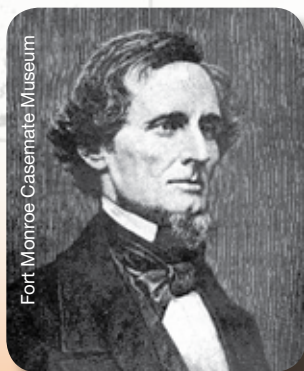
Virginia Visions

Virginia's Fort Monroe is frequented by many long-dead historical figures, in addition to several Soldier and civilian ghosts. Most of the sightings occur within the Casemate—a moat encircled structure built in the 1800s. The homes within the fortress have been visited by several apparitions, including that of a small child dressed in turn-of-the-century clothing, who can be heard laughing and playing with toys.

Quarters 1, the oldest and most ornate residential structure on post, is said to be haunted by the Marquis de Lafayette, Abraham Lincoln and Ulysses S. Grant. These figures are usually seen reviewing papers that are likely connected to troop movements and battles of the Civil War. Confederate President Jefferson Davis, who had been incarcerated at Monroe, returns to the base and wanders freely atop the ramparts of his former prison.

Tales of strange noises and inanimate objects that move by themselves still exist today. One construction worker swears he heard footsteps and a slamming door while working alone on the 8th floor of the Chamberlin

Portrait of Confederate President Jefferson Davis. Davis was incarcerated at Fort Monroe for allegedly conspiring to kill Abraham Lincoln. Due to poor conditions in his cell, Davis' health deteriorated and he was moved to a different one. He remained a prisoner for two more years, though he was never found guilty of treason. He died nearly two decades later, but his spirit is said to wander freely on the ramparts of his former prison.



McGill Hall was built in 1889 on Fort Riley to house Cavalry troops and is frequented by a tall apparition in a dark overcoat. In 1997, Spc. Bradley Ehrhardt awoke in the night to find this figure looming over his bed. He confronted the ghost, and it vanished. Other residents reported seeing and hearing the ghost wander the halls.

building earlier this year. Project consultant Larry Knott confirmed that no other workers were on the top floor at that time.

"We're pretty much convinced it was Esmerelda," Knott said, referring to the ghost that is said to reside in the building. Legend has it that Esmerelda's fisherman-father was lost at sea in the 1920s, and she is still trying to find a vantage point that would give her a glimpse of his return.

Prairie Phantoms

Several of the most notorious tales of spirits come from Kansas, at Fort Riley and Fort Leavenworth. Leavenworth is home to one of the most famous haunts in Kansas: the Rookery.

Built in 1832, the Rookery is the oldest building on post and currently serving as family quarters. Reports of apparitions of a young girl, an elderly man with bushy hair, and of several older women have been made.

Fort Riley also boasts several buildings troubled by phantoms. McGill Hall, built in 1889 to house Cavalry troops and the oldest building on base, is frequented by a tall figure in a dark overcoat.

During the Cavalry's stay in McGill, residents had a unit photograph taken after formation one day.

The Soldiers replaced their rifles in a circular rack after the session, barrels upright and leaning in together.

One Soldier did not properly unload his rifle, and as he inserted it into the rack it discharged—killing another Soldier.

In 1997, Spc. Bradley Ehrhardt returned to Fort Riley from deployment and was transferred to the 977th Military Police Company. His barracks were in McGill Hall.

One evening, Ehrhardt returned to McGill before his roommate and was alone in his room. At around 1

a.m., he awoke to discover a figure looming over the foot of his bed.

The apparition was more than six feet tall, and wore a dark overcoat. Ehrhardt described the figure as being like a shadow, though he couldn't see through him. Eventually, Ehrhardt gathered his courage and confronted the phantom, saying he would appreciate it if it just left him alone and "went somewhere." The specter vanished and he never saw it again, but other members of Ehrhardt's unit claim to have seen and heard the Soldier walking around the barracks.

From kindly nannies to brutal criminals, each installation has its own unique, ghostly past. Though some people seek the stories purely for the joy of frightening themselves, others — the ones who have experienced the paranormal—find these tales to be quite real. **sm**

Watercolor and background pen and ink drawing by Laura Hames.

Patrick Buffet of Fort Monroe Public Affairs, Angela Moncur of Fort Huachuca Public Affairs, Alison Kohler of Fort Riley Public Affairs and Jennifer McCarthy of Fort Dix Public Affairs contributed to this story.

Building Smart

Story by Carolyn Jackson



The Town Center at Fort Belvoir is an example of mixed-use development, with family housing above the ground-floor commercial establishments.

VENTURE onto any Army installation and it's easy to see that construction is booming. Through fiscal year 2011, more than \$40 billion is being invested in the Army's military-construction program for facilities such as barracks, company operations centers, battalion headquarters, and child-development and fitness centers.

What isn't perhaps as noticeable to Soldiers and their families is the environmentally friendly way these new facilities are being designed and constructed. Beginning this fiscal year, the Army — through its construction agent, the U.S. Army Corps of Engineers — requires that all new climate-controlled facilities be certifiable under the U.S. Green Building Council's Leadership in Energy and Environmental Design silver rating.

By using LEED's nationally accepted whole-building approach to sustainable "green" design, the Army is improving energy efficiency and reducing life-cycle costs and environmental impacts.

"LEED has a scorecard," said Harry Goradia, a mechanical engineer at the USACE headquarters in Washington, D.C. "Projects are evaluated in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality."

Points are accumulated in the five areas to reach one of four levels — certified, silver, gold or platinum. To meet the LEED silver standards for new construction, facilities need 33 to 38 points. The maximum number of points available for a platinum rating is 69.

According to USGBC statistics, building in the United States account for 36 percent of energy use, 30 percent of raw-materials use, 12 percent of potable-water consumption and 39 percent of greenhouse-gas emissions.

The LEED standards aim to lower these percentages. To that end, at installations throughout the Army, USACE district project managers and design-and-construction teams are sitting down with

members of the directorates of public works to determine what points are appropriate for a particular project and how to meet, at a minimum, LEED silver standards. Some items are fairly easy, Goradia said.

"You are awarded points for including things like bicycle racks, because you're reducing fuel consumption and road maintenance, and for providing showers for bike riders so that people are encouraged to use their bikes," said Goradia, USACE's LEED subject-matter expert.

Other credits require more effort. At Fort Bliss, Texas, where the Corps' Fort Worth District is overseeing construction of facilities for the \$4 billion expansion, the project team is capturing storm-water runoff in retention ponds, where it's held and then filtered through the sandy soil and back into the ground.

"If we just let it run off into the storm drains and then into the Rio Grande, we'd run the risk of putting contaminants back into the water stream and not recharging the local aquifer," said Cecil Penn, a LEED-accredited professional and senior project manager with the Jacobs/Huitt-Zollars joint-venture land development engineer organization.

Using the sand as a natural filtration system is an example of meeting the needs of a sustainable environment based on location, Penn said. The same method wouldn't necessarily work at other locations where there is a lot of clay, because that type of soil drains slowly and would hold the water rather than filter it.

Penn said the Fort Worth District team also worked closely with Fort Bliss officials to develop a sustainable approach for the type of landscape they wanted.

"We plan to use indigenous plants to capture the desert environment," he said.

Using native plants allows the team to create a natural environment while at the same time reducing the amount of water needed to sustain the landscape, Penn said. This, in turn, cuts costs, because the plants won't need to be watered or maintained as often.



Soldiers of 1st Brigade Combat Team, 1st Armored Division, play a game of basketball in their new barracks' recreational area at Biggs Army Airfield. The barracks are part of the \$4 billion expansion at Fort Bliss, Texas.

At Fort Carson, Colo., Resident Engineer Matt Ellis said he is encouraged by the use of the LEED standards. A member of the Corps' Omaha District, Ellis has spent 24 years working for USACE.

"One of our charters for the Corps is to be stewards of the environment. With LEED, not only is it more environmentally friendly, but it's also healthier and more occupant friendly," he said.

"Natural lighting is something that makes a huge difference," Ellis said, noting that many of the facilities at Fort Carson are being built with large, open areas and plenty of windows and skylights.

Implementing the LEED requirements is a learning process. Each Corps district with a military program is required to have a LEED-accredited professional on staff. Ellis said he and his team discuss the LEED standards at their weekly design meetings and sometimes even conduct LEED-specific meetings.

Many of the requirements seem to conflict with one another; more fresh air for building occupants requires you to have to treat the building with more heating and air-conditioning systems, Ellis said. "As with so many other things in life, it's all about finding the balance between our commitment to the environment and making it as comfortable and healthy as we can for the occupant."

John J. Resta, scientific advisor for the U.S. Army Center for Health Prevention and Promotion, agreed.

"We are the Army's public-health command," he said. "We support construction in accordance with the LEED

silver standards. I think this is one of the best things we can do in terms of increasing the public health of the Army.

"When you have improved indoor air quality," he said, "you have less hacking, less sneezing, your eyes aren't red, the transmission of respiratory illnesses drops. If people have access to showers, they are more apt to ride a bike to work. That's smart design."

Resta said the next step is building smart Army communities using LEED-neighborhood development standards. USACHPPM is discussing this concept with the Installation Management Command and USACE to develop a process to ensure that Army master plans promote active lifestyles and offer connectivity between residential, commercial, retail and recreational areas.

Andrea Kuhn, USACE master planning team associate, points to Fort Belvoir, Va., as an example of these new neighborhoods.

"Fort Belvoir created a new 'town center,' featuring a mixed-use development of commercial establishments on the ground floor with family housing above," she said. "This provides easy access to the convenience store, coffee shop, and other goods and services."

Additionally, Kuhn said, families residing in approximately 500 newly constructed housing units at the Virginia post are within an easy five-minute walk or bike ride of the town center without having to use their cars.

Master plans that integrate these types of uses create numerous opportunities for

health benefits, Kuhn said. By clustering mixed uses, "walkable" communities are created and more open space and common recreational areas are provided, offering residents options other than reliance on their cars.

When these types of neighborhoods are available, "people can go to work, shop, go to the movies, or go to the park without driving as much," Resta said. "As a result, they tend to be more active. They walk more, bike more. They tend to lose weight and are less stressed because they aren't spending a lot of time commuting. If they need a gallon of milk, they get on their bikes and ride the half-mile to the commissary to get it.

"What we're trying to do is make our people healthier and happier – and by people we mean Soldiers, families, retirees, Department of Army civilians and any contractors who happen to be in the area," he said. "We want to give an extra pillar to LEED to reduce energy, improve the environment, and improve public health. We want to build buildings that improve the lives of the occupants."

And for Ellis, that's a huge part of his job satisfaction.

"Being around these Soldiers and working on an Army installation is like no other job site. These guys are going off and putting their lives on the line. The idea that we can do something to improve their quality of life while they're here is a good feeling." **sm**

Carolyn Jackson works for the Headquarters, U.S. Army Corps of Engineers Public Affairs Office.

IED Interrogation Arm

Story by Erica Fineman-Bertoli

THE U.S. Army is confronting a new kind of warfare. The current Iraq War, in contrast to the Gulf War of the early 1990s, has spawned an environment where unconventional warfare has become the norm. One ever-present characteristic of this new brand of warfare is the indiscriminate use of improvised explosive devices by enemy insurgents.

"In 1991, you had two armies facing off across an empty desert," said Stephen H. Bennett, mechanical engineer at the Night Vision and Electronic Sensors Directorate. "But when you have two large armies going at each other, there is less concern for civilian casualties, as there aren't as many civilians around. This time, you have a very narrow area in which you can conduct your

operation, where the goal is not only to be victorious over the insurgents, but at the same time to not disaffect the civilian populous."

The NV&ESD developed the Interrogation Arm for the RG-31 and Husky vehicles in response to this shift in engagement.

According to NV&ESD Team Lead Larry Jackson, the arm was designed for use by route-clearance teams who are charged with detecting and neutralizing potentially deadly IEDs.

"There are several vehicles that are used for route-clearance missions," said Jackson. These missions, during which Soldiers attempt to

find as many IEDs along the roads as possible, are critical to those who will need to travel those roads safely later in the day.

Previously, a vehicle called the Buffalo was the primary IED interrogation vehicle. However, according to Jackson, the Buffalo, while effective, wasn't always available.

"The word we got back from theater is that the Soldiers often don't have the Buffalos when they need them. The vehicle is in high demand, and there just aren't enough of them," he said.

So in collaboration with the team at NV&ESD, discussions began for a new technology that could be quickly developed and fielded.

"We said we would like to provide a similar arm capability to vehicles such as the Husky and the RG-31, which were being used in security missions but had no arm attachment that would allow for IED interrogation," he said.

The new arm, which was initially fielded in Iraq in May 2007 and in Afghanistan in July 2007, capitalizes on the IED interrogation capabilities of the Buffalo. Designed as an independent component, it can be attached to vehicles already in theater. Additionally, the arm is lightweight,



Ongoing collaboration with Soldiers in theater resulted in functional features such as a pivot point that allows the arm to examine hard-to-reach areas.

easy to mount and repair, easy to use and significantly less expensive than the Buffalo, Jackson said.

"The feedback has been positive, and the troops like it," said Bennett, who was present in Iraq last spring to support deployment of the new arm.

As the Interrogation Arm continues to be refined, there is constant communication with the Soldiers on the ground, providing engineers with first-hand guidance on functional improvements.

"It is an ongoing process to give it more usability and make it more functional for the troops," said Jackson.

As a result of this ongoing collaboration with the Soldiers who use the arm, functional advancements were made, including the ability to examine hard-to-reach areas behind guardrails.

"We got this information back from the theater and realized we needed to put a pivot point in the middle of the arm so that if there is a guardrail, you can reach out and dip down behind the guardrail to do the interrogation," Jackson said.

The danger and disruption caused by IEDs requires constant vigilance,

according to Jackson, who says that because of the inexpensive, flexible nature of IEDs, they have become the ideal weapon of a much weaker enemy.

"IEDs can be almost anything. They are inexpensive and adaptable," said Jackson. "There is no limit to the form and shape they can take, so it makes it very easy for the enemy to put it out there."

"The Interrogation Arm is primarily used by combat engineers whose job it is to go out and find the IEDs. The more of them that we can find and eliminate, the better the morale of the entire military organization in the theater," Jackson continued. "Convoys have to use these roads to get supplies or weapons from point A to point B. Units have to go out on patrol. If they have the threat of an IED on their minds, it makes their job that much more difficult."

The Interrogation Arm was recently honored as one of the Top Ten Army Technologies of 2007. At an event held in Arlington, Va., in June, Gen. Benjamin S. Griffin, then-commanding general of the U.S. Army Materiel Command, thanked all of the recipients for their critical contributions to modern warfare.

"When you talk to the units in the fields, they know about them. They use them," he said of the honored inventions.

In the case of NV&ESD's Interrogation Arm, after initial fielding in both Iraq and Afghanistan, additional units have been ordered in growing quantities to be used in theater. To this end, NV&ESD has been working with Product Manager Countermine to feed the continually growing demand.

"We have been asked to adapt it to different vehicles and we are getting more and more applications in the field," said Jackson, who has served as a civilian engineer for the U.S. Army for 28 years.

"The satisfaction of getting this piece of equipment into theater where it is helping to save Soldiers' lives is very rewarding," he said. "For me, this has been the most satisfying project I have worked on in my career."

Bennett agrees.

"There is a satisfying feeling you get when you design something that makes a significant difference," he said. "We didn't choose this war; this war was chosen for us. But this is one war that we can't postpone. We have to win. And I am glad I was able to make a difference through this program." **sm**

Erica Fineman-Bertoli is a public affairs specialist at the U.S. Army Communications-Electronics Research, Development & Engineering Center.



The IED Interrogation Arm is lightweight and able to be attached to existing vehicles in theater.

Man of the Year



USA Wrestling, the national governing body for amateur wrestling in the United States, has named Van Stokes, Man of the Year.

Stokes, director of recreation and deputy director of morale, welfare and recreation at Fort Campbell, Ky., is the second vice president of USA Wrestling and represents the armed forces on USA Wrestling's board of directors.

"I am deeply honored and humbled to receive this recognition," Stokes said. "I am truly grateful for all the opportunities I've had to work with the dedicated leaders, coaches, athletes and volunteers in this organization. USA Wrestling embodies what is best about the Olympic spirit."

He received the award this summer at the 2008 U.S. Olympic Team Trials for Wrestling at the University of Nevada Las Vegas.

"This award is the highest honor we give within USA Wrestling," said Gary Abbott, USA Wrestling's director of communications. "It covers the entire gamut of the sport — from leadership to any other area where someone can make a major impact. Van Stokes has consistently been one of our strongest leaders and one of the most committed volunteers we have."

"He makes a difference in wrestling on a daily basis, and we're very proud to recognize all he's done for us," Abbott added.



U.S. Marine Corps Maj. Jay Antonelli (left), USA Wrestling's Greco-Roman Coach of the Year, congratulates Fort Campbell, Ky., Director of Recreation and Deputy Director of Morale Welfare and Recreation Van Stokes on being named Man of the Year by the national governing body for amateur wrestling in the United States, while USA Wrestling Woman of the Year Dr. Linn Miller (center) watches.

Stokes is serving his second term as second vice president of USA Wrestling. He has also served two terms as the organization's treasurer.

At the 2008 U.S. Olympic Team Trials for Wrestling, Stokes teamed with Takedown Wrestling Radio host Scott Sasber to call a live webcast with audio and visuals for NBCOlympics.com.

He has been active on numerous USA Wrestling standing committees, has served in leadership positions on international competitions, and was the U.S. Wrestling Team leader at the 1995 Pan American Games in Argentina and the Conseil International du Sport Militaire's 2007 Military World Games in India.

Stokes began working as a television sports announcer in 1990, covering different Olympic sports for ESPN, FOX, and other networks. He

has handled numerous events for USA Wrestling, both for national television broadcasts and Internet webcasts, including the 1995 World Championships and several U.S. National Championships.

Stokes was an assistant producer for the World Wrestling Championships in 1995 and 2003, as well as the 1996 Olympic Games in Atlanta.

His first love as a teenager was baseball, but he was a 3-year letterman at running back for Marietta College's football team in the NCAA Division III Ohio Athletic Conference from 1967 through 1969.

"But I really have a joy for calling Olympic-style wrestling," said Stokes, who never wrestled because his high school did not have a team. **sm**

Tim Hipps works in the Family Morale, Welfare and Recreation Command Public Affairs Office.



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